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Economic Strategy: Correlation between Macro and Microeconomics on Income Inequality in Indonesia

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Abstract

This study sees a critical gap in the previous body of research, which it seeks to fill; the disclosure of the unemployment ratio correlation has only been measured by the level of economic growth. This study is to add investment variables and government expenditure variables that objectively aim to measure the level of effectiveness in handling the unemployment ratio, which is then a measurement of the effectiveness of unemployment. Economic growth is measured by its impact on income inequality through empirical, conceptual relationships as a critical review and economic strategy for the future. The research uses secondary data on Indonesian macro and microeconomics since 2003-2018, then testing uses a quantitative approach to correlation, regression, and scatterplot. The results of this study show correlations between variables, and volatiles on the graphs show a similar trend. In other words, variables are bound together and support each other. The strategy of prioritizing the scale of government expenditure and investment to reach the target is the primary concern, so that the economic cycle can be optimal and equipped to face the possibility of an economic recession in the future. Many factors cause complex income inequality, though investment does not show a correlation to income inequality.

Keywords: Investment, Government Expenditure, Economic Growth, Unemployment, Inequality Income

JEL Classification Code: D04, D31, D6

1. Introduction

Indonesia is the largest country in Southeast Asia, where achievements have been significant in terms of reducing poverty levels since 1999 (Tjoe, 2018). Indonesia is also the fourth most populous country in the world after China, India, and the United States. (Putra, Said, & Hasan, 2017). However, the problem of reducing levels of poverty has not been accompanied by a significant reduction in income inequality. The data show that there is still income inequality in Indonesia, where economic growth is enjoyed by the wealthiest part of the communities, which accounts for 20% of the population (www.worldbank.org, 2015), even income inequality between rich and poor people is still relatively high. Inequality is reflected in the accumulation of wealth enjoyed by only a handful of people in Indonesia. The country is ranked the fourth highest out of nine countries (Russia, Thailand, India, Brazil, China, United States, South Africa, and Mexico). 49,3% of the national wealth is owned by only 1% of the citizens (Widyanita, 2017). Indonesia's economic growth is the third-fastest among other G-20 countries; statistical figures from 2000 to 2017 show Indonesia's GDP (Gross domestic product) per capita increases 4% every year after China and India (Tjoe, 2018).

The Indonesian Gini ratio index also increased from 30 in the 90s to 39 in 2017 (See. Figure 1). However,

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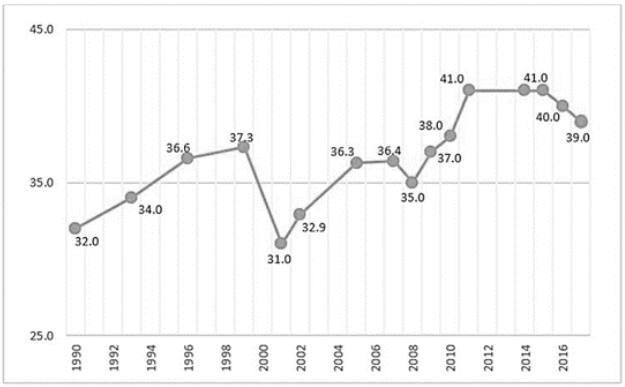

Figure 1: Gini Ratio Indeks

Indonesia's increasing economic growth is not in line with income distribution, triggering inequality between citizens. Inequality of income that moves slowly with economic growth is triggered by some fundamental aspects, namely, educational qualifications, labor market, and labor skills, which also increase (www.worldbank.org, 2015). As regards the relationship between unemployment rate and income inequality Gächter et al. (2017) and Shao et al. (2016) state that strong correlations can occur if the unemployment rate can be reduced, which will cause income inequality to be also suppressed. On the contrary, there is the view that there is no significant correlation between income inequality driven by economic growth and the unemployment rate (Sadiku, Ibraimi, & Sadiku, 2015; Ghoshray, Ordóñez, & Sala, 2016).

The efforts of the Indonesian government to trigger economic growth through the stimulation of funds for public-service allocation and welfare (e.g., education and health) also experienced an increase, with the hope that there would be no vacancy for skilled labor, which would have an impact on unemployment. Therefore, from Indonesia's State Budget (APBN) in 2018, funding of IDR347.4 trillion has been allocated to meet the public-service sector; IDR157.6 trillion went to the social protection sector and IDR143.1 trillion went for the education sector (www.kemenkeu.go.id, 2018). Efforts have been committed to increase the state budget in the public sector to support efforts to accelerate a quality economic growth by strengthening the economic impetus. Because another impact created by unemployment is income inequality, it can result in the inability of the community to meet the essential aspects of basic needs and services (i.e., food, health, and education) (Ram, 1982; Ram, 1992; Di Domenico & Fournier, 2014; Dinh, 2020; Luong et al., 2020; Nguyen, 2020).

In Indonesia, the government's policy to overcome the problem of income inequality is pursued through several strategic steps such as improving public services, strengthening social protection, (Gächter et al., 2017), training for workers, providing employment, and raising public awareness through tax collection (www.worldbank.org, 2015). Gächter et al., (2017), using the Equilibrium Theory approach, explains that differences in the socio-economic status have an impact on welfare. However, there are gaps in the different study results put forward by Han, Zhao, and Zhang (2015), which states that the Gini ratio and total income per capita have no significant impact on income inequality.

Therefore, efforts to reduce income inequality through the approach to reduce the unemployment in Indonesia, via measures to increase investment at the micro-level, are expected to foster community business enthusiasm so that regional and national economic growth can be realized (Halvarsson, Korpi, & Wennberg, 2018). Indonesia's State Budget Posture of 2018, which reflects the government investment sector, emphasizes aspects of national infrastructure development where the budget allocation reaches IDR410.4 trillion to the ministry of public works and public housing (PUPR), the ministry of transportation, the General Allocation Fund (DAU), the Indonesian government investment PMN (State Capital Participation), and LMAN (State Asset Management Institute). It is where investment policies in the infrastructure sector are to support the center of economic growth, the main path of logistics, and integration of capital to encourage the development of strategic areas. The Indonesian government investment financing increased from IDR59.7 trillion in 2017 to IDR65.7 trillion in 2018 (www.kemenkeu.go.id, 2018).

Investment in Indonesia itself is governed by various governmental regulations (i.e., Article No. 25, 2007, Article No. 37 of 1999, Government regulation No. 8 of 2007, Article No. 1 of 2004). The type of investment also varies from investment in the form of bonds, direct investment, investment in the development of general services, services, and financing of community business activities, and investment in the event of BUMN and BUMD (State-owned enterprises, Local-Owned enterprises). The investment provides an essential role as the primary foundation to encourage a country's economic growth (Afidchao et al., 2014; Szkorupová, 2014; Mihaiu & Opreana, 2013; Trejo García et al., 2017; Khodeir, 2016; Guerrazzi, 2015; Sadikova, Faisal, & Resatoglu, 2017). Furthermore, according to a statement, the economic growth aspired to be pursued through productive investments both short and long term (Kudasheva et al., 2015; Halvarsson et al., 2018). On the other hand, in empirical evidence in several studies, there are different results shown by several studies (Strat et al., 2015; Khodeir, 2016; Ghoshray et al., 2016), which say that investment has no impact on economic growth. There are differences in the results of studies mediated by differences in government decision-making processes contained in government policies that cover investments. So, it can be

stated that government policy indeed plays a vital role in supporting a conducive and adequate investment climate (Roşoiu, 2015).

Furthermore, regarding the subject of this study, amid the opportunities that exist and given that the world economic arena is moving to Asia, Indonesia has some great opportunities to realize an investment climate, both at the macro and micro levels, so that it provides hope for economic growth in the long run. One of them is an investment in infrastructure, and investment in the creative and digital economy (Sukarno, 2019). Nevertheless, the classic obstacle to investment in Indonesia continues to roll; one of the main hurdles in investing is the flow of bureaucracy and licensing, whose coordination is considered sub-optimal between the center and the regions (www.republika.co.id, 2018; www.kemenprin.go.id, 2018), weaknesses in meeting the energy supply needed by industry, and the concentration of investment distribution, which only focuses on one particular area (www.nasional.kontan.co.id, 2010). Therefore, the Indonesian government's effort to increase economic growth in addition to investment, is through the effectiveness of government expenditure.

Reflecting on the 2018 Indonesian State Budget, total national expenditures were IDR2,220.7 trillion (Expenditure for sector ministries and institutions), IDR847,4 trillion (General allocation fund to the province), IDR766,2 trillion (Village fund), and non-ministerial and institutional expenditure, IDR607.1 trillion (www.kemenkeu.go.id, 2018). The purpose of the state expenditures is to synergize social protection programs and sharpen social assistance, one of which is in the aspects of education and health. In this regard, the dominant state expenditure policy in the education and health sector has been proven empirically able to address social inequalities directly or indirectly. (Lavrinovicha *et al.*, 2015; O'Campo *et al*., 2015; Shen *et al*., 2018; Kim, 2016). In Indonesia alone, the distribution of the highest unemployment rate by province released by the Central Statistics Agency (BPS) recorded that there were 131.55 million people in the workforce, of which 124.54 million were employed, and the remaining 7.01 million were unemployed. In Indonesia, the open unemployment rate reached 5.33 percent, decreasing by 0.28 percent from 2016.

Theoretical exposures and disclosure of factual phenomena regarding the relationship of investment, government expenditure on economic growth to overcome unemployment and income inequality gave birth to the main ideas related to the various suitability and mismatch between theories, facts, and the results of empirical testing. This study sees a critical gap in previous studies: the disclosure of the unemployment ratio correlation is only measured by the level of economic growth. So, the novelty developed in this study is to add investment variables and government expenditure variables to measure the level of effectiveness to deal with the unemployment. It is then a measurement of the effectiveness of unemployment, and economic growth is measured by its impact on income inequality through empirical, conceptual relationships. See Figure 2 for a critical review.

2. Literature Review and Hypothesis Development

2.1. Macroeconomics Perspective

In macroeconomic theory, human development (HDI) depends on two main aspects, namely, economic growth and decreasing inequality between populations (Sargent, 2009; Davidson, 2011). The development of a dignified human index requires government efforts in terms of an even increase in the education sector because income inequality is caused, among other factors, by the high unemployment rate. The research "Influence of Education on Unemployment Rate and Incomes of Residents" found that investment in human development starts from improving education to better meet basic human needs, so that the link between investment and government expenditure (government expenditure) through the education sector directly impact income inequality for the productive workforce (Lavrinovicha et al., 2015; www.bbc.com, 2014). In 2016, research results from Lavrinovicha et al. (2016) and Kudasheva, Kunitsa, and Mukhamediyev (2015) state that social inequality caused by income inequality comes from unequal access to education. Income inequality, which has a direct effect on high unemployment, will also have an impact on the difference in health and social welfare (Kim, 2016; Shao et al., 2016). So, that the hope to be achieved is an equal distribution of all aspects to prevent inequality in the community (Gächter et al., 2017).

The measurement of income inequality is closely related to the economic growth potential of a region (Goschin, 2015). Many researchers have examined the causal relationship between the two from various research perspectives (Hassan, Zaman, & Gul, 2015; Lyubimov, 2017). The Kuznets Theory states that reducing income inequality can be pursued by the government through comprehensive, tested government policy. In line with Blundell et al. (2018) and Birčiaková, Stávková, and Antošová (2014), the inequality theory approach with the comparative study approach further states that in addition to government policy, the constitutional arrangement and governance patterns also contribute significantly in terms of decreasing or increasing income inequality trends.

In terms of government policy, the source of state revenue is primarily sourced from tax and non-tax revenue (PNBP). Policies pursued through improving the investment climate in the business world, include providing incentives and optimizing economic potential and tax reform measures. One of which is the application of tax amnesty, Automatic

Exchange of Information (AEol), which aims to increase the tax base to prevent the practice of tax avoidance and tax erosion, taxpayer compliance, tax holidays, via data and taxation information systems as well as service improvement and organizational effectiveness in the scope of taxation. Other policies pursued are also through improving regulations, increasing services and management, optimizing PNBP and improving public services (www.kemenkeu.go.id, 2018).

Apart from that, the policy on the aspects of government expenditure, which aims to support the administration of government, is pursued through the administration of government policies to maintain the welfare of the government apparatus and the effectiveness of the bureaucracy. The anticipation of risks related to government expenditure policies is also translated into anticipating economic uncertainty through the support of fiscal risk reserves and disaster mitigation. Appropriate state expenditure becomes a goal aspiration based on efficiency and effectiveness, which can also have a significant impact on reducing the ratio of social inequality and the unemployment rate through the allocation of funds that are more coherent in terms of investment (Raišienė, Bagdonienė, & Bilan, 2014; Li & Hu, 2015; Bouwmeester & Scholtens, 2017).

Furthermore, the problem in macroeconomic growth is the problem of unemployment, which will have a universal impact on improving the quality of life; this can also be tangent to the economic growth of a region or even a country. This causality is very closely related, given that labor is one of the essential aspects of classical economic production (man, capital, and land). The main unemployment problem is identified by the role of adequate education to shape the demand for skilled workers in the labor market (Kudasheva et al., 2015), so that an essential aspect in government policy issues requires the education aspect as one of the principal investments to welcome skilled workers to reduce unemployment and overcome income inequality (Halvarsson et al., 2018). This opinion is in line with what is happening, where the Indonesian Central Statistics Agency released the unemployment rate of 7 million people, dominated by high school / vocational school graduates (Andreas, 2018).

The leading causes of high unemployment are also low income and low socioeconomic consumption (Guerrazzi, 2015; Gächter et al., 2017). Government policy in terms of investment in the sectors expanding employment becomes heavy work that requires the participation of many parties. The employment status shown in Figure 3 show that, in 2017, a total of 52 million people – 42.97 percent of the population – worked in the formal sector (permanent workers/employees). Previous studies (Adriana, 2014; Roşoiu, 2015; Sadiku et al., 2015) in the Macedonian Country concluded that there was no correlation between economic growth and the unemployment ratio. Other studies, with limitations in the disclosure and testing of variables in measuring the unemployment rate, also showed these results (Ghoshray et al., 2016; Khodeir, 2016; Strat et al., 2015). All state that foreign investment does not affect the reduction of the unemployment rate.

Disparities between regions are prevalent in the economic activities. Disparities between areas occur because of differences in the natural resources and in demographic conditions found in each area. This difference makes the ability of a region to drive the development process unique to that region. Therefore, in each part of the country, there are usually developed regions (Developed Region) and underdeveloped regions (Underdeveloped Region) (Hidayat, 2014). Inequality between regions was raised by Douglas C. North in his analysis of the Neo-Classical Growth Theory. In this theory, he raised the prediction of the relationship between the level of national economic development of a country and the imbalance of development between regions. This hypothesis was later known as the Neo-Classical Hypothesis.

2.2. Prior Research and Conceptual Framework

Increased investment is believed to have a contribution as a lever towards the movement of the economic development of a nation. In macroeconomics, investment also acts as one component of national income, Gross Domestic Product (GDP). The effect of investment on a country's economy is reflected in the country's national income, the investment is positively correlated with GDP; in general, it can be said, if investment rises, then GDP tends to increase. Or conversely, if investment falls, GDP tends to decrease. Some economists consider investment formation to be an essential factor that plays a strategic role in a country's economic growth and development. When entrepreneurs, individuals or the government invest, there will be a certain amount of capital invested, and there are some purchases of goods that are not consumed, but are used to produce goods and services in the future. Even economic growth that can result in economic inequality in the community can also be minimized.

The results of the study reveal the existence of a significant influence between investment and economic growth (Afidchao et al., 2014; Szkorupová, 2014; Mihaiu & Opreana, 2013). The results of the empirical study discussed earlier also reveal the same thing, namely, the existence of a positive relationship between investment and income inequality (Kudasheva et al., 2015; Halvarsson, Korpi, & Wennberg, 2018). Equitable economic growth, starting from positive investment, is useful so that it can have a significant impact on reducing the unemployment ratio (Trejo García et al., 2017; Guerrazzi, 2015; Sadikova et al., 2017; Li & Hu, 2015; Khodeir, 2016; Elshamy, 2013) but the results of research from (Sadiku et al., 2015; Strat et al, 2015;

Ghoshray et al., 2016) It was revealed that there was no positive correlation between economic growth and declining unemployment rates.

The utilization of government spending is optimized both in supporting the implementation of government programs. Productive state expenditure will encourage better economic growth through productive and beneficial expenditure activities that are both short and long term, such as infrastructure development to facilitate modes of transportation and economic activities. On the other hand, significant economic growth will drive down unemployment ratios through business activities, both on a macro and micro-scale. Unemployment that can be reduced will have a significant effect on decreasing the income inequality ratio. This opinion is in line with the results of research (Lavrinovicha et al., 2015; Kim, 2016; Raišienė et al., 2014; Li & Hu, 2015; Bouwmeester & Scholtens, 2017; O'Campo et al., 2015; Bouwmeester & Scholtens, 2017; Shen et al., 2018; Mihaiu & Opreana, 2013; Candemir & Zalluhoglu, 2011; Nguyen, 2019). However, there are different opinions expressed by (Adriana, 2014; Roşoiu, 2015) However, there are different opinions expressed (Han et al., 2015) arguing that government spending with a different constitutional system also had a significant impact on income inequality and economic growth.

3. Research Design and Methods

3.1. Data and Materials

The type of data used in this study are quantitative data with secondary data types in Indonesia, which are summarized from thirty-four provinces in the period 2003 - 2018, which includes data on the level of development of government investment (i.e., realization of investment in domestic investment and realization of foreign investment capital). Government expenditure data include non-ministerial and institutional expenditures, regional transfer funds, balancing funds consisting of profit-sharing funds, general allocation funds, special allocation funds, non-physical special allocation funds, local incentive funds, special autonomy funds and privileged funds, and village funds. There are also economic growth data, unemployment rate data, and data on income inequality ratios. The data materials are attached in Appendix.1.

3.2. Measurement and Research Design

The measurement value equalization model requires several stages, such as variable investment and government expenditure, namely, data transformation using the Log-10 compute variable using SPSS. After transforming the value variable, the test continues with testing the hypothesis through direct and indirect testing (See Figure 2) using Smart-PLS. The feasibility testing function of the model ignores the principles of normality, validity, and reliability, given that the nature of the data used is secondary. Furthermore, at the stage of testing the hypothesis of significance limits ($p < 0.05$) the Sobel-test method is used. Correlation analysis between variables uses the Spearmen Correlations method and a scatter plot graph.

4. Results and Discussion

4.1. Correlation

This sub-section explains the correlation between related macroeconomic variables, the spearman correlation method, and scatterplot graphics (See Appendix 2). Economic growth variables have a positive, but not significant correlation ($\alpha = 0.320$ or 32%; sig. Level $0.228 > 0.05$). It is the same as stating the correlation between government expenditure on economic growth ($\alpha = 0.343$ or 34.3%; sig. Level $0.193 > 0.05$). On the other hand, economic growth is positively and significantly correlated with income inequality (economy ($\alpha = 0.653$ or 65.3%; sig. Level $0.006 < 0.01$), and a negative correlation does not relate directly between economic growth with the

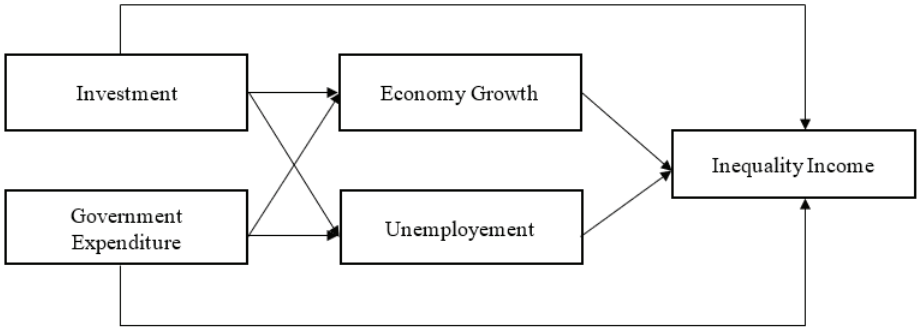

Figure 2: Conceptual Framework

unemployment rate (α = -0.370 or -37%; level 0.159> 0.05). Then, the correlation between the unemployment rate, which will have an impact on income inequality, has a positive and significant correlation (α = 0.637 or 63.7%; sig. Level 0.008 <0.01). Investment also has the impact and relationship to the magnitude of the unemployment rate, although indirectly (α = -0.907 or 90.7%; sig. Level 0.000 <0.01). Likewise, the impact caused by expenditure on the magnitude of income inequality levels is positively and significantly correlated (α = 0.713 or 71.3%; sig. Level 0.002 <0.05) The most significant correlation is shown in the relationship between government expenditure and investment (α = 0.940 at au 94%; sig. Level 0,000 <0.01).

4.2. Regression

Appendix 4 illustrates the direct effect of variables. The role of economic growth and government expenditure as an effort to reduce inequality income figures has a positive and significant impact. The low level of unemployment has no positive and significant impact on low-income inequality. However, there are different results, and investment has no significant effect on income inequality.

In tests involving the mediation of economic growth and unemployment, the role of government expenditure and investment, which is higher than the data observation period and then subsequently mediated by economic growth variables, will reduce the problem of income inequality significantly Conversely, some mediation test results using the unemployment variable with the Sobel test showed no significant effect. Figure 3 graphically explains the correlation between variables. The volatile model is formed following a similar pattern; for example, the trend of economic growth and the magnitude of the level of government expenditure are rising or falling due to movement in the unemployment rate curve and income inequality.

4.3. Discussion

4.3.1. Indonesia in Macroeconomics Perspective

The results of studies and testing of data illustrated by graphs and regression models show some positive, significant, and insignificant influences. Appendix 2 depicts volatiles with similar patterns. This means that the rise, fall, and intersection of one variable through the graph will have an impact on other variables systematically. Dissecting Indonesia's statistics in 2019, the central government expenditure sector (See. Table 1) (e.g., ministries and official expenditure and non-official expenditure and official expenditure) is the sector that absorbs the most significant budget (i.e., 63.2% for 2017; 65.4% for 2018 and 66, 4% for 2019) where the aims and objectives of ministries or non-officials and non-expenditure are intended for guarantees and facilities as well as health and education infrastructure. Then, the second most significant Indonesian government expenditure is in the sector of expenditure for regions (i.e., transfers to areas, balances funds, regional incentive funds, and special autonomy privilege functions, village funds). To finance such a large amount of government expenditure, the largest source of income certainly comes from taxes and revenue from natural resources. However, the amount of spending that is not balanced with the level of income makes the trade balance produces a budget deficit.

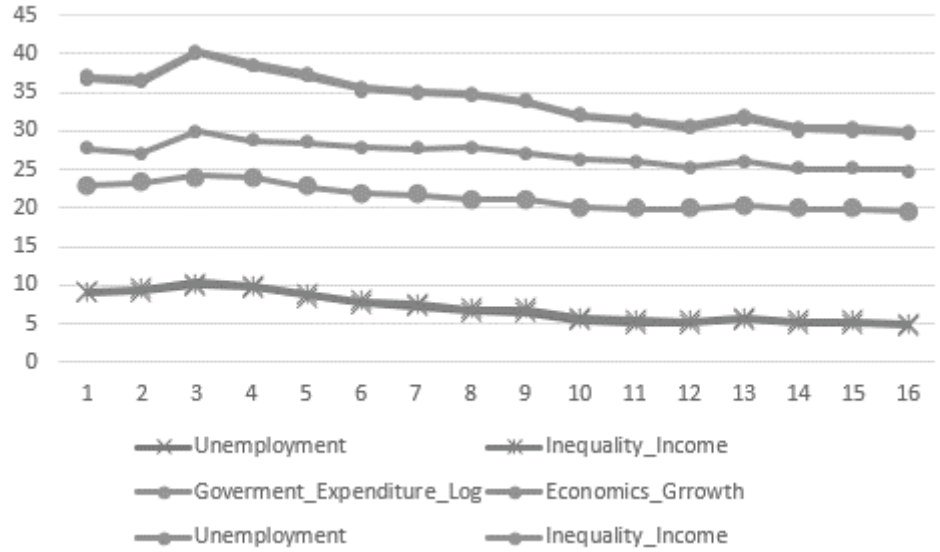

Figure 3: Correlation and Tren Model

4.3.2. Relevance between Macro and Microeconomics

The graph shown in Appendix 2 provides clear evidence that income inequality in Indonesia is influenced by a variety of factors, in particular, this study shows how the role of community dependents on government expenditure. The geological typology of Indonesia as an archipelago (total area 1,916,862.20 km2 with the total of 4,108 islands) also triggers various income inequality issues from the aspect of inflation and price imbalances against market demand. On the other hand, dependence on government expenditure through ministries and officials or non-expenditure and the largest source of income from the public tax sector and the income derived from natural resources can be seen from the positive and negative sides of how the production process, distribution of goods, and services with long chains can only be enjoyed by the community. The amount of government expenditure whether related to the ministries or not and officials or non-sectors is highly dependent on unique and optimal aspects of good corporate governance; errors and inaccuracies in the GCG process can trigger unequal income inequality issues given Indonesia's vast demographic area. The magnitude of the level of government expenditure (Government expenditure volatile) also has an impact on the level of unemployment that occurs when National non-tax revenue is sourced from natural resource (oil, gas, mining, forestry, fishery). Because if studied in-depth, for example, in the mining sector, forestry and fishery, economic-driving factors in the industry are predominantly derived from the SES BE group (see Figure 4 and Appendix 3). While revenue from the Ministries (SOE's) sector only contributed a third out of five domestic revenue sources.

Table 2: Budget Percentage Allocation of Central Government Expenditures by Function

Function	2017	2018	2019
General Public Service	27,0	30,0	31,7
Defence	8,2	7,4	6,6
Public order and Safety	9,2	9,3	8,7
Economics Affairs	23,6	23,1	23,8
Environment	0,9	1,1	1,1
Housing and Community Amenities	2,3	2,2	1,6
Health	4,7	4,5	3,8
Tourism and Culture	0,4	0,5	0,3
Religion	0,7	0,7	0,6
Education	10,9	10,1	9,3
Social protection	12,0	11,2	12,3
In Million Rupiahs	1.315.526	1.454.494	1.634.340

Figure 4 illustrates the placement of workers in the primary industry, and there are three employment statuses that are highly dependent on government regulations and the amount of government expenditure (i.e., temporary workers, casual workers, and family workers). In contrast, own-account workers are very reliant on government regulations and conditions of economic growth. Employees with a significant amount can be assumed to burden national income

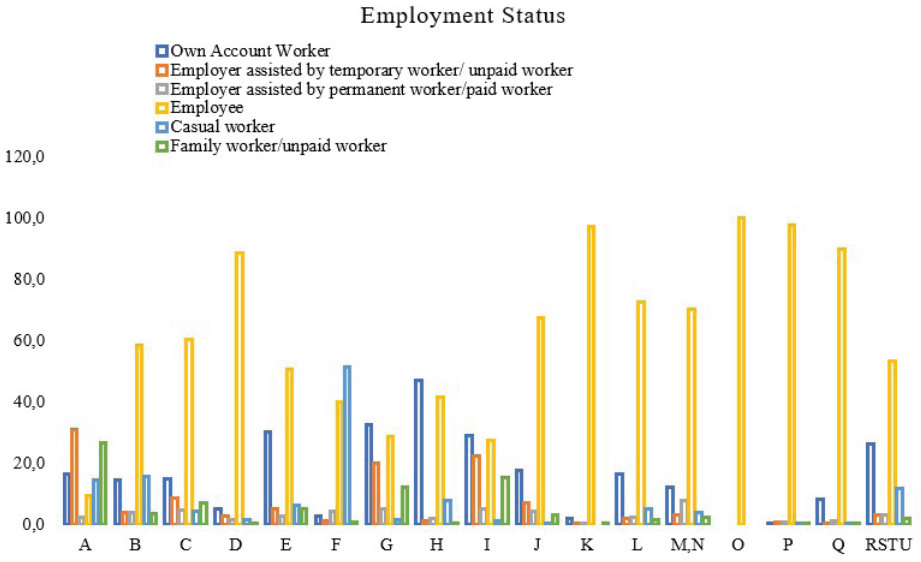

Figure 4: Employment Status

and government expenditure. In situations of economic growth that are VUCA (Volatility, Uncertainty, Complexity, and Ambiguity) in the future, graphic structures such as those depicted in Appendix 2 can be unstable and have a significant impact from microstructures to macroeconomics.

5. Conclusions

Economic sectors are formed from the middle to lower classes where the center to smaller economic groups have a lot of impact on the rate of economic growth. Therefore, government attention in the form of government expenditure and investment must be maximized on the industrial cogs for the middle class and below. Curves that show people's dependence on the state give a negative signal if, at any time, the economic conditions and the country's conditions experience economic confusion.

It is the primary concern for the government to create a conducive and specific economic environment so that the problem of income inequality can be resolved. Government expenditure needs to be redesigned, not only predominantly to cover social security, but also needs further efforts so that it is optimally absorbed for the wheels of a potential economy driven by the middle-class (i.e., natural revenue). The income inequality that was felt was caused, among other factors, by the amount of the budget that was absorbed to finance employees who work under the government and the ministry. The middle-class is working in the A and G industries. Appendix 3 shows the distribution of most economic actors.

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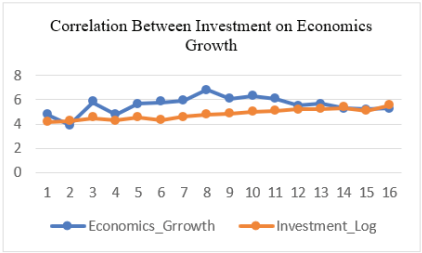
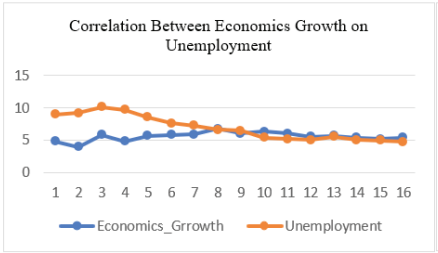
Appendix 1: Resume of Data Materials

Year	Investment (in Million Rupiahs)	Government Expenditure (In million rupiah)	Economics Growth (in Percent)	Unemployment (in Percent)	Inequality Income (In Percent)
2003	13.690,78	49.085.485.600.000	4,8	9,01	0,244
2004	17.092,91	54.758.918.128.000	3,9	9,20	0,303
2005	31.479,24	61.719.839.959.000	5,8	10,09	0,346
2006	19.589,80	81.799.148.671.000	4,8	9,68	0,335
2007	34.878,70	80.239.537.115.789	5,7	8,58	0,332
2008	20.363,20	116.127.432.588.942	5,8	7,59	0,359
2009	37.798,90	146.193.922.129.909	5,9	7,23	0,376
2010	60.574,97	145.259.539.876.708	6,8	6,61	0,363
2011	75.953,52	169.266.037.596.500	6,1	6,43	0,378
2012	92.136,19	230.312.131.024.567	6,3	5,37	0,379
2013	127.846,63	247.286.175.263.282	6,1	5,16	0,38
2014	156.026,11	276.048.170.080.868	5,5	5,02	0,379
2015	179.402,41	303.378.727.360.023	5,7	5,56	0,364
2016	216.295,47	310.542.927.441.006	5,3	5,02	0,36
2017	129.770,19	377.420.211.667.339	5,2	4,97	0,36
2018	328.554,02	397.290.251.346.567	5,3	4,70	0,357

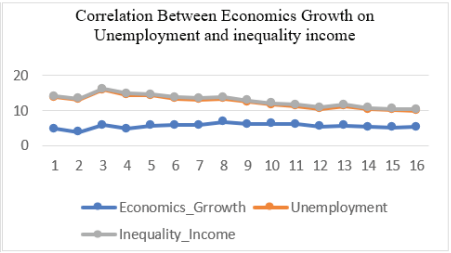
Appendix 2: Correlation Between Variables



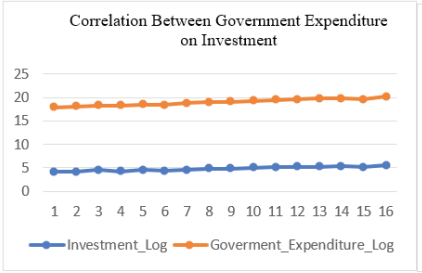
(a)



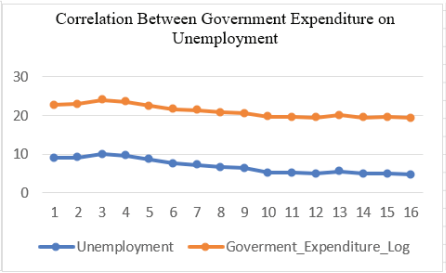
(b)



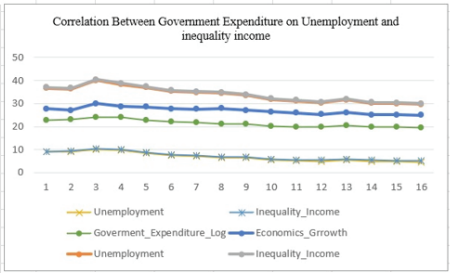
(c)



(d)



(e)



(f)

Appendix 3: Percentage Allocation of Population 15 Years of Ages by Main Employement Status and Main Industry 2019

Main Employment Status	Main Industry (%)																
	A	B	C	D	E	F	G	H	I	J	K	L	M,N	O	P	Q	RSTU
Main Employment Status	16,3	14,6	14,8	5,2	30,2	2,6	32,6	46,8	29,1	17,6	1,8	16,5	12,2		0,6	8,1	26,4
Own Account Worker	30,9	3,9	8,6	2,6	5,2	1,3	20,0	1,2	22,4	7,1	0,3	2,1	3,2		0,6	0,5	3,1
Employer assisted by temporary worker/ unpaid worker	2,4	4,0	4,7	1,6	2,6	4,3	5,2	2,1	5,0	4,2	0,5	2,3	7,9		0,8	1,3	3,3
Employer assisted by permanent worker/ paid worker	9,4	58,4	60,4	88,6	50,7	40,0	28,4	41,5	27,4	67,5	97,3	72,6	70,3	100	97,5	89,6	53,4
Employee	14,6	15,5	4,5	1,5	6,2	51,2	1,5	7,9	1,0	0,5		5,0	4,0		0,1	0,2	11,7
Casual worker	26,5	3,6	7,1	0,5	5,1	0,7	12,2	0,5	15,2	3,1	0,1	1,5	2,4		0,3	0,4	2,1
Family worker/ unpaid worker	16,3	14,6	14,8	5,2	30,2	2,6	32,6	46,8	29,1	17,6	1,8	16,5	12,2		0,6	8,1	26,4

Info main Industry and Total Employment Status *(In Person)*		
A	Agriculture, Forestry, and Fishing	35.703.074
B	Mining and Quarrying	1.454.256
C	Manufacturing	18.251.456
D	Electricity and Gas	338.447
E	Water Supply; Sewerage, Waste Management, and Remediation Activities	471.067
F	Construction	8.300.297
G	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	23.073.515
H	Transportation and Storage	5.398.582
I	Accommodation and Food Service Activities	7.662.236
J	Information and Communication	894.673
K	Financial and Insurance Activities	1.796.913
L	Real Estate Activities	389.925
M, N	Business Activities	1.664.791
O	Public Administration and Defence; Compulsory Social Security	4.681.280
P	Education	6.066.878
Q	Human Health and Social Work Activities	1.848.460
RSTU	Other Services Activities	6.009.100

Appendix 4: Regression Test

	β	Std. Error	Beta	T	P-Value	Info
(Constant)	-2.427	1.038		-2.338	0.039 < 0.05	Supported
Economic Growth → Inequality income	0.026	0.008	0.502	3.174	0.009 < 0.01	Supported
Government Expenditure → Inequality Income	0.184	0.075	1.603	2.451	0.032 < 0.05	Supported
Unemployment → Inequality Income	0.166	0.055	0.985	2.112	0.022 < 0.05	Supported
Investment → inequality income	-0.019	0.035	-0.235	-0.547	0.596 > 0.05	Not Supported
R-Square = 0.874						
F test = 8.870; sig 0.00						
Kolomogorov Smirnov test = 0.958 > 0.05						
Sobel Test						**Info**
Government Expenditure – Economic Growth – Inequality income	0.082 0.024	0.022 0.008	-	2.337	0.019 < 0.05	Supported
Government Expenditure – Unemployment – Inequality income	0.182 0.012	0.022 0.013	-	0.896	0.370 > 0.05	Not Supported
Investment – Economic Growth – Inequality Income	0.052 0.026	0.009 0.009	-	2.520	0.011 < 0.05	Supported
Investment – Unemployment – Inequality Income	0.051 -0.006	0.016 0.009	-	-0.643	0.520 > 0.05	Not Supported